

**REMARKS**

Applicant thanks the Examiner for examining the application. Applicant has canceled claims 3, 9, 12, 18, 21, 27, 30, and 35. Applicant has amended claims 1-2, 6, 8, 10-11, 15, 17, 19-20, 24, 26, 28-29, 33-34, and 37-44. Applicant has also added new claims 45-54. Support for these amendments may be found throughout the specification, particularly on page 5 lines 24-28, page 7 lines 3-8, and page 7 line 25 to page 8 line 22, and thus these amendments do not constitute the addition of new matter. With the amendments, claims 1-2, 4, 6-8, 10-11, 13, 15-17, 19-20, 22, 24-26, 28-29, 31, 33-34, and 36-54 are now pending.

*Applicant's Note*

Applicant respectfully requests that, if the Examiner has any issues remaining with the claims following this amendment and RCE, the Examiner contact Applicant's Attorney at the telephone number listed below to conduct an Interview so as to attempt to resolve these issues prior to the issuance of a further action.

*Claim Rejections – 35 U.S.C. § 102(e)*

The Examiner rejected claim 6 under 35 U.S.C. § 102(e) as being clearly anticipated by U.S. Patent No. 6,477,586 to Achenson et al.

Applicant has amended independent claim 6, such that Applicant's amended independent claim 6 now requires, among other things, in a worker thread not associated with the assigned task queue, processing the task, wherein the task is located, during the act of processing, in the assigned task queue. The Examiner cited to col. 5, lines 42-45 and 60-63, and to col. 6 line 64 to col. 7 line 9 of Achenson et al. as disclosing this limitation, prior to amendment.

However, neither the cited text nor any other text of Achenson et al. actually discloses in a worker thread not associated with the assigned task queue, processing the task, wherein the task is located, during the act of processing, in the assigned task queue, as required by Applicant's amended independent claim 6.

The cited text of Achenson et al. states as follows:

Similarly the thread and queue pairs shown in blocks 46, 48, 50, 52, 54, 56, 58, 60 and 62 are worker threads and queues in the illustrated example of FIG. 2

...

Alternatively, the worker thread receiving the RPC message may indicate that message is not in the appropriate process within the distributed system to handle the RPC request and that the RPC message is to be forwarded to another process.

...

In a case where an RPC request message is determined by the worker thread of Process 2A to be one which is not processable by that worker thread, the worker thread will determine from data stored in process 2A which other process in the distributed system will be able to deal with the RPC request. The RPC request message is then placed on the appropriate queue for transfer to a further process. For example, the RPC message in process 2A of block 32 can be placed in queue Qc shown in block 78 for transfer to process 3 of block 34 via connection 92. The message thread, or associated send function block, sends the RPC request message over connection 92 to process 3 where message thread in block 80 receives the message.

The Examiner argues that this text suggests that some thread in process 3 is working on a task that is queued in a queue that is part of process 2A. The Examiner expounds on this argument on pages 8 and 9 of the current Final Office Action. Specifically, the Examiner states that the cited text “clearly teaches that a worker thread within a process 3 is processing the message/task that was previously queued from a queue of process 2A.” While Applicant respectfully submits that that requirement that the task have been previously queued in a non-associated queue is not present anywhere in Applicant’s claims, the Examiner points out that the Examiner is broadly interpreting the claim language, at least in part because applicant has not significantly narrowed the definition or scope of the claims.

Leaving this issue aside, Applicant has now specifically amended Applicant’s independent claim 6 such that it now requires in a worker thread not associated with the assigned task queue, processing the task, wherein the task is located, during the act of processing, in the assigned task queue. Because the task must be located in the

assigned task queue during the act of processing, the assigned task queue not associated with the worker thread performing the act of processing, Achenson et al. does not apply. As Applicant's have previously argued, and as the Examiner admits, the worker thread within a process 3 in Achenson et al. processes a message/task that was **previously** queued from a queue of process 2A, not a message/task that is **currently** queue in a queue of process 2A.

Thus, for at least the reasons given above, Achenson et al. does not disclose Applicant's amended independent claim 6, and therefore, Applicant's amended independent claim 6 is allowable over Achenson et al.

Applicant notes that Applicant has made further amendments to Applicant's allowable amended independent claim 6, which Applicant will discuss below with regards to the rejections under 35 U.S.C. § 103(a).

*Claim Rejections – 35 U.S.C. § 103(a)*

The Examiner rejected claims 1, 4, 7, 10, 13, 15-16, 19, 22, 24-25, 28, 31, 33, 36, 39, and 40 under 35 U.S.C. § 103(a) as being unpatentable over Achenson et al., as applied to claim 6 above, in view of U.S. Patent No. 5,438,680 to Sullivan.

Applicant's amended independent claim 1 now requires, among other things, from a worker thread, processing a task, wherein the task is located, during the act of processing, in a task queue not associated with the thread. This limitation is similar to the limitation discussed above with regards to Applicant's allowable amended independent claim 6. Thus, for at least the reasons given above with regards to Applicant's allowable amended independent claim 6, Achenson et al. does not teach or suggest Applicant's amended independent claim 1, and therefore Applicant's amended independent claim 1 is not obvious in light of Achenson et al., alone or in combination with Sullivan. Thus, Applicant's amended independent claim 1 is allowable over Achenson et al., alone or in combination with Sullivan.

Applicant has similarly amended Applicant's independent claims 10, 15, 19, 24, 28, 33, 39, and 40. Thus, for at least the reasons given above with regards to Applicant's allowable amended independent claims 1 and 6, Achenson et al. does not

teach or suggest Applicant's amended independent claims 10, 15, 19, 24, 28, 33, 39, and 40, and therefore Applicant's amended independent claims 10, 15, 19, 24, 28, 33, 39, and 40 are not obvious in light of Achenson et al., alone or in combination with Sullivan. Thus, Applicant's amended independent claims 10, 15, 19, 24, 28, 33, 39, and 40 are allowable over Achenson et al., alone or in combination with Sullivan.

Applicant's dependent claims 4, 7, 13, 16, 22, 25, 31, and 36 depend from, respectively, Applicant's allowable amended independent claims 1, 6, 10, 15, 19, 24, 28, and 33. Therefore, for at least the reasons given above with regards to Applicant's allowable amended independent claims 1, 6, 10, 15, 19, 24, 28, and 33, Achenson et al. does not teach or suggest Applicant's dependent claims 4, 7, 13, 16, 22, 25, 31, and 36, and therefore Applicant's dependent claims 4, 7, 13, 16, 22, 25, 31, and 36 are not obvious in light of Achenson et al., alone or in combination with Sullivan. Thus, Applicant's dependent claims 4, 7, 13, 16, 22, 25, 31, and 36 are themselves allowable over Achenson et al., alone or in combination with Sullivan.

The Examiner then rejected claims 2, 3, 8, 9, 11, 12, 17, 18, 20, 21, 26, 27, 29, 30, 34, and 35 under 35 U.S.C. § 103(a) as being unpatentable over Achenson et al. in view of Sullivan, as applied to claims 1, 6, 10, 15, 19, 24, 28, and 33 above, and further in view of U.S. Patent No. 6,377,984 to Najork et al.

Applicant has canceled claims 3, 9, 12, 18, 21, 27, 30, and 35. At least part of the limitations formerly found in these canceled dependent claims, are now found in Applicant's allowable amended independent claims 1, 6, 10, 15, 19, 24, 28, 33, 39, and 40, and Applicant's amended independent claims 37, 38, and 41 (themselves allowable for the reasons discussed below).

Applicant's amended independent claim 1 (and all other independent claims) now require, among other things, determining whether a selected task queue is in a **non-busy** state (emphasis added). The Examiner cited to col. 3 lines 22-33 of Najork et al. as teaching or suggesting this limitation when it was, prior to amendment, found in Applicant's now canceled dependent claims 3, 9, 12, 18, 21, 27, 30, and 35. Further,

the Examiner argues in the current Final Office Action that, “**When Najork teaches of identifying an empty task queue**, it means that the identified queue has been determined that it is not in a busy. If a queue is in the busy state, it would not be identified and/or considered as an empty queue. A queue must have been determined whether it is in a busy state or not in order to be considered as an empty queue or a busy queue.”

With all due respect to the Examiner, Applicant respectfully disagrees. The Examiner’s reasoning contains a fatal flaw, namely that it is based upon the incorrect assumption that there are only two states a queue may be in: a busy state, or an empty state. Thus, the Examiner reasons, if a queue is determined to be in an empty state, as is arguably suggested by Najork et al., then it must be not busy.

However, while arguably Najork et al. does at least suggest determining that a queue is empty, Applicant’s amended independent claims do not require that a queue be determined to be empty. Rather, Applicant’s amended independent claims now require that a queue be determined to be in a non-empty state. There is a difference between an empty state, and a non-empty state. This difference is most clearly shown in Applicant’s new dependent claims 45-49. There, determining comprises checking a task in the selected task queue to determine if the task is in the process of being removed by a worker thread; and checking a task in the selected task queue to determine if the task is being acted upon by a worker thread. In other words, when a queue is in a non-empty state, there are two possible states it may be in. The queue may be in a busy state, because a task in the queue is being acted upon by a worker thread. Alternatively, the queue may be in a holding state, because a task in the queue is in the process of being removed from the queue by a worked thread. This is described in Applicant’s specification at least at page page 7 lines 3-8. In either situation, the queue is in a non-empty state. There is no teaching or suggestion in Najork et al. that a queue be determined to be in a non-empty state, as required by Applicant’s amended independent claims, or that a task in a queue be checked to determine if the task is in the process of being removed by a worker thread, and if the

task is being acted upon by a worker thread, as required by Applicant's new dependent claims 45-49.

Thus, Najork et al. does not teach or suggest Applicant's amended independent claims 1, 6, 10, 15, 19, 24, 28, 33, 37, 38, 39, 40, and 41, and therefore Applicant's amended independent claims 1, 6, 10, 15, 19, 24, 28, 33, 37, 38, 39, 40, and 41 are not obvious in light of Najork et al., alone or in combination with Achenson et al. and/or Sullivan. Thus, Applicant's amended independent claims 1, 6, 10, 15, 19, 24, 28, 33, 37, 38, 39, 40, and 41 are allowable over Najork et al., alone or in combination with Achenson et al. and Sullivan.

Further, Najork et al. does not teach or suggest Applicant's dependent claims 2, 4, 7-8, 11, 13, 16-17, 20, 22, 25-26, 29, 31, 34, 36, and 42-54, which depend from Applicant's allowable amended independent claims 1, 6, 10, 15, 19, 24, 28, 33, 37, 38, 39, 40, and 41. Thus, Applicant's dependent claims 2, 4, 7-8, 11, 13, 16-17, 20, 22, 25-26, 29, 31, 34, 36, and 42-54 are themselves not obvious in light of Najork et al., alone or in combination with Achenson et al. and/or Sullivan. Therefore, Applicant's dependent claims 2, 4, 7-8, 11, 13, 16-17, 20, 22, 25-26, 29, 31, 34, 36, and 42-54 are allowable over Najork et al., alone or in combination with Achenson et al. and Sullivan.

Finally, the Examiner rejected claims 37, 38, and 41-44 under 35 U.S.C. § 103(a) as being unpatentable over Achenson et al. in view of Sullivan and further in view of U.S. Published Patent App. No. 2003/0225815 to Brenner et al.

Applicant's amended independent claims 37, 38, and 41 all include limitations similar to those of Applicant's allowable amended independent claims 1, 6, 10, 15, 19, 24, 28, 33, 39, and 40. Thus, for at least the reasons given above with regards to Applicant's allowable amended independent claims 1, 6, 10, 15, 19, 24, 28, 33, 39, and 40, the combination of Achenson et al. with Sullivan and further with Brenner et al. does not teach or suggest Applicant's amended independent claims 37, 38, and 41. Therefore, Applicant's amended independent claims 37, 38, and 41 are not obvious in light of the combination of Achenson et al. with Sullivan and further with Brenner et al., and thus Applicant's amended independent claims 37, 38, and 41 are allowable over

the combination of Achenson et al. with Sullivan and further with Brenner et al.

Applicant's dependent claims 42-44 depend from, respectively, Applicant's allowable amended independent claims 37, 38, and 41. Therefore, for at least the reasons given above with regards to Applicant's allowable amended independent claims 37, 38, and 41, the combination of Achenson et al. with Sullivan and further with Brenner et al. does not teach or suggest Applicant's dependent claims 42-44. Thus, Applicant's dependent claims 42-44 are themselves not obvious in light of the combination of Achenson et al. with Sullivan and further with Brenner et al., and therefore, Applicant's dependent claims 42-44 are themselves allowable over the combination of Achenson et al. with Sullivan and further with Brenner et al.

Finally, Applicant's new dependent claims 50-54 are themselves allowable over any of the cited art. Applicant's new dependent claim 50 requires, among other things, wherein assigning a task to a task queue in an essentially random fashion comprises: selecting a task queue; determining whether the selected task queue is in a non-empty state; if the selected task queue is in a non-empty state, stealing a next task in sequence from the non-empty selected task queue by moving the task from the non-empty selected task queue to an associated queue that is empty, otherwise repeating the steps of selecting and determining until a selected task queue in a non-empty state is found. Applicant's new dependent claims 51-54 all include similar limitations.

Simply stated, there is no teaching or suggestion in any of the cited art (Achenson et al., Sullivan, Najork et al., and Brenner et al.) that a next task in sequence may be stolen from a non-empty queue (particular a non-empty queue as determined according to Applicant's allowable new dependent claims 45-49) and then placed in an empty queue according to the process identified in Applicant's new dependent claims 50-54. Thus, for at least this reasons, Applicant's new dependent claims 50-54 are themselves allowable over all the cited art.

**CONCLUSION**

Applicant believes this Amendment and Response to be fully responsive to the present Office Action. Thus, based on the foregoing Remarks, Applicant respectfully submits that this application is in condition for allowance. Accordingly, Applicant requests allowance of the application.

Applicant hereby petitions for any extension of time required to maintain the pendency of this case. If there is any fee occasioned by this response that is not paid, please charge any deficiency to Deposit Account No. 50-3735.

Should the enclosed papers or fees be considered incomplete, Applicant respectfully requests that the Patent Office contact the undersigned collect at the telephone number provided below.

Applicant invites the Examiner to contact the Applicant's undersigned Attorney if any issues are deemed to remain prior to allowance.

Respectfully submitted,

/SPM/

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